

**Claims**

1. Axial piston machine (1) with a housing (2), in which  
a drive disc (7) and a cylinder block (12) axially  
5 arranged in its vicinity are rotatably mounted  
relative to one another about longitudinal centre  
axes (11, 13), which extend obliquely to one another  
by an angle (W1) in an oblique axis plane (E),  
a plurality of piston bores (15) being arranged in the  
10 cylinder block (12) and in which pistons (16) are  
displaceably guided axially to and fro, of which the  
piston ends facing the drive disc (7) are supported in  
a universally pivotal manner on the drive disc (7),  
on the front face of the cylinder block (12) facing  
15 away from the drive disc (7) a cam disc (18) being  
arranged which is supported on the housing (2) by a  
first positioning device (19) with positively  
cooperating positioning elements (19a, 19b) and on its  
side facing the cylinder block (12) comprising a guide  
20 element (21) with a guide centre axis (22) extending  
coaxially to the longitudinal centre axis (13) of the  
cylinder block (12),  
**characterised in that**  
the positioning element (19b) arranged on the cam  
25 disc (18) is offset transversely to the guide centre  
axis (22) in the oblique axis plane (E) and the cam  
disc (18) is able to be installed in a further  
position rotated by approximately 180° about the guide  
centre axis (22), in which the positioning  
30 elements (19a, 19b) also cooperate.

2. Axial piston machine according to claim 1,  
**characterised in that**  
the first positioning device (19) comprises a pivoting  
guide (31) curved about the intersection (14) between  
5 the longitudinal centre axes (11, 13) of the drive  
disc (7) and the cylinder drum (12) and in which the  
cam disc (18) can be adjusted in the oblique axis  
plane (E) by an adjustment device (32) and can be  
fixed in the respective adjustment position.
- 10 3. Axial piston machine according to claim 1 or 2,  
**characterised in that**  
the positioning element (19b) is offset relative to  
the guide centre axis (22) by an offset angle (W2)  
15 which is smaller than approximately  $10^\circ$ .
4. Axial piston machine according to claim 3,  
**characterised in that**  
the offset angle (W2) is approximately  $3^\circ$ .
- 20 5. Axial piston machine according to any of the preceding  
claims,  
**characterised in that**  
the guide element (21) comprises a guide surface (23a)  
25 rotationally-symmetrically curved about the guide  
centre axis (22) which preferably is a raised portion  
of the cam disc (18) or planar and in that the front  
surface of the cylinder block (12) facing the cam  
disc (18) is adapted to the form of the guide  
30 surface (23a).

6. Axial piston machine according to any of the preceding claims,  
**characterised in that**  
the positioning element (19b) arranged on the cam disc  
5 (18) is a recess in which an adjusting pin is held as a second positioning element (19a).
7. Axial piston machine according to any of the preceding claims 1 to 6,  
10 **characterised in that**  
the cylinder block (12) is supported by the guide element (21) transversely to its longitudinal centre axis (13) on the cam disc (18).
- 15 8. Axial piston machine according to any of the preceding claims,  
**characterised in that**  
the cylinder block (12) is positioned positively against relative displacement in the oblique axis  
20 plane (E) by a second positioning device (41).
9. Axial piston machine according to claim 8,  
**characterised in that**  
the second positioning device (41) is formed by a  
25 positioning pin (42) which is seated with a pin portion (42c) in a positioning recess (42a) in the cam disc (18) and is seated in a positioning recess (42b) of the cylinder block (12) with a positioning  
pin (42d) offset in the oblique axis plane (E) by the  
30 offset (a).

10. Axial piston machine according to claim 9,  
**characterised in that**  
the pin portion (42d) seated in the cylinder  
block (12) is rotatably mounted in the cylinder block  
5 (12) by a rotary bearing (40).
11. Axial piston machine according to claim 9 or 10,  
**characterised in that**  
the pin portion (42c) seated in the cam disc (18)  
10 forms a positioning element for the first positioning  
device (19).
12. Axial piston machine according to claim 11,  
**characterised in that**  
15 the positioning element is formed by a positioning  
recess (19b) open on the front face.
13. Axial piston machine according to any of claims 9  
to 12,  
20 **characterised in that**  
between the cam disc (18) and the cylinder block (12)  
a disc (44) with a hole (44a) is arranged for the  
positioning pin (42) which preferably is large enough  
so that in the offset position of the cam disc (18) a  
25 transitional region (42g) of the positioning pin (42)  
preferably extending obliquely has a free space in the  
hole (44a).
14. Axial piston machine according to any of claims 9  
30 to 13,  
**characterised in that**

the positioning pin (42) comprises an elongate through hole which preferably opens out into the positioning recess (19b).

- 5 15. Cam disc (18) for an  
axial piston machine (1) with a housing (2) in which a  
drive disc (7) and a cylinder block (12) axially  
arranged in its vicinity with pistons (16) axially  
displaceable therein, are rotatably mounted relative  
10 to one another about longitudinal centre axes  
(11, 13), which extend obliquely to one another in an  
oblique axis plane (E) by an angle (W1),  
the cam disc (18) comprising
- a guide element (21) arranged on a first face of  
15 the cam disc (18) with a guide centre axis (22) which  
extends transversely to the cam disc (18) and in its  
centre region,
  - a pivoting guide surface (18a) on the second face  
of the cam disc (18) opposing the first face, this  
20 pivoting guide surface (18a) being curved in the form  
of a circular arc shape in a convex manner about an  
intersection (14) located on the guide centre  
axis (22) and parallel to an oblique axis plane (E)  
containing the guide centre axis (22),
  - 25 - and a positioning element (19b) on the cam  
disc (18) for positioning the cam disc (18) on the  
housing (2),

30 **characterised in that**

the positioning element (19b) is offset transversely to the guide centre axis (22) in the oblique axis plane (E).

- 5 16. Cam disc according to claim 15,  
**characterised in that**  
the positioning element (19b) is offset relative to  
the guide centre axis (22) by an offset angle (W2)  
which is smaller than approximately 10°.
- 10 17. Cam disc according to claim 16,  
**characterised in that**  
the offset angle (W2) is approximately 3 DEG.
- 15 18. Cam disc according to any of claims 15 to 17,  
**characterised in that**  
the guide element (21) comprises a guide surface (23a)  
rotationally-symmetrically curved about the guide  
centre axis (22) and which preferably is a raised  
20 portion of the cam disc (18).
19. Cam disc according to any of claims 15 to 18,  
**characterised in that**  
the positioning element (19b) arranged on the cam disc  
25 (18) is a recess in which an adjustment pin (19a) can  
be held.